

WHAT IS CLAIMED IS:

1. A transmission power control apparatus in a base station for measuring SIR, which is a ratio of a receive signal to an interference signal, and controlling  
5 transmission power of a mobile station in such a manner that said measured SIR will agree with a target SIR, comprising:

a fading detector for detecting rate of change in fading;

- 10 a correction unit for correcting the target SIR based upon the rate of change in fading; and

means for creating a command, which controls transmission power of the mobile station in such a manner that the measured SIR will agree with said  
15 corrected target SIR, and transmitting this command to the mobile station.

2. A transmission power control apparatus according to claim 1, further comprising a memory for storing correspondence between rates of change in fading and  
20 correction values of target SIR, wherein said correction unit corrects the target SIR using a correction value corresponding to the rate of change in fading read out of the memory.

3. A transmission power control apparatus in a base  
25 station for measuring SIR, which is a ratio of a receive signal to an interference signal, and controlling transmission power of a mobile station in such a manner that said measured SIR will agree with a target SIR,

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comprising:

a searcher for detecting multipath and levels of signals that arrive via respective ones of the paths;

a level-difference calculation unit for calculating  
5 level differences between paths using the levels of signals;

a correction unit for correcting the target SIR based upon the level differences between paths; and

means for creating a command, which controls  
10 transmission power of the mobile station in such a manner that the measured SIR will agree with said corrected target SIR, and transmitting this command to the mobile station.

4. A transmission power control apparatus according to  
15 claim 3, further comprising a memory for rounding, as  $(L_{max} - L_s)$ , levels for which the level difference from a maximum level  $L_{max}$  is less than a set value  $L_s$ , and storing correction values of target SIR in  
correspondence with combinations of level differences  
20 between mutually adjacent reception levels in the order of the reception levels;

wherein said level-difference calculation unit arranges the reception levels of each of the paths of the multiple paths in order of decreasing or increasing  
25 size and calculates level differences between mutually adjacent reception levels; and

said correction unit corrects the target SIR using a correction value corresponding to the combination of

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level differences read out of the memory.

5. A transmission power control apparatus in a base station for measuring SIR, which is a ratio of a receive signal to an interference signal, and controlling
- 5 transmission power of a mobile station in such a manner that said measured SIR will agree with a target SIR, comprising:

a fading detector for detecting rate of change in fading;

- 10 a searcher for detecting multipath and levels of signals that arrive via respective ones of the paths;

a level-difference calculation unit for calculating level differences between paths using the levels of signals;

- 15 a correction unit for correcting the target SIR based upon a combination of the rate of change in fading and the level differences between paths; and

means for creating a command, which controls transmission power of the mobile station in such a

20 manner that the measured SIR will agree with said corrected target SIR, and transmitting this command to the mobile station.

6. A transmission power control apparatus in a base station for measuring SIR, which is a ratio of a receive
- 25 signal to an interference signal, and controlling transmission power of a mobile station in such a manner that said measured SIR will agree with a target SIR, comprising:

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a fading detector for detecting rate of change in fading;

a searcher for detecting multipath and levels of signals that arrive via respective ones of the paths;

5 a level-difference calculation unit for calculating level differences between paths using the levels of signals;

a BER measurement unit for measuring bit-error rate BER;

10 a correction unit for correcting the target SIR based upon a combination of the rate of change in fading, the level differences between paths and a difference between measured BER and target BER; and

means for creating a command, which controls  
15 transmission power of the mobile station in such a manner that the measured SIR will agree with said corrected target SIR, and transmitting this command to the mobile station.

7. A transmission power control apparatus according to  
20 claim 6, further comprising a memory for storing correction values of target SIR in correspondence with combinations of rate change in fading and level differences between paths;

wherein said correction unit corrects a correction  
25 value, which corresponds to a combination of the rate of change in fading and the level differences between paths read out of the memory, on the basis of the difference between measured BER and target BER, and corrects the

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target SIR by said correction value.

8. A transmission power control apparatus in a base station for measuring SIR, which is a ratio of a receive signal to an interference signal, and controlling  
5 transmission power of a mobile station in such a manner that said measured SIR will agree with a target SIR, comprising:

a fading detector for detecting rate of change in fading;

10 a searcher for detecting multipath and levels of signals that arrive via respective ones of the paths;

a level-difference calculation unit for calculating level differences between paths using the levels of signals;

15 a FER measurement unit for measuring frame-error rate FER;

a correction unit for correcting the target SIR based upon a combination of the rate of change in fading and the level differences between paths and a difference  
20 between the measured FER and target FER; and

means for creating a command, which controls transmission power of the mobile station in such a manner that the measured SIR will agree with said corrected target SIR, and transmitting this command to  
25 the mobile station.

9. A transmission power control apparatus according to claim 8, further comprising a memory for storing correction values of target SIR in correspondence with

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combinations of rate change in fading and level  
differences between paths;

wherein said correction unit corrects a correction  
value, which corresponds to a combination of the rate of  
5 change in fading and the level differences between the  
paths read out of the memory, on the basis of the  
difference between the measured FER and the target FER,  
and corrects target SIR by said correction value.

10. A transmission power control apparatus according to  
10 claim 1, 5, 6 or 8, wherein said fading detector detects  
the rate of change in fading from a difference between  
phase of a pilot signal, which has been received from  
the mobile station before a prescribed time in the past  
and phase of the pilot signal at the present time.

15 11. A transmission power control apparatus according to  
claim 1, 5, 6 or 8, wherein said fading detector detects  
the rate of change in fading based upon the measured SIR.

12. A transmission power control apparatus according to  
claim 1, 5, 6 or 8, wherein said fading detector detects  
20 the rate of change in fading based upon direction of  
transmission power control by TPC bits.

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